

Progress of the Aeronautics Industry

By M. Joseph Meehan, Editor, Survey of Current Business

DESPITE the many vicissitudes experienced by some of its branches, the aeronautics industry has a depression record of substantial progress in many directions. The impact of the declining phase of the business cycle caught this young and vigorously grow-

ing industry at the peak of a wave of rapid expansion and necessitated rather extensive readjustments to conform to a period of more normal growth. Certain major commercial activities—notably the miscellaneous services, such as sightseeing, charter flying, student instruction, photography, and aerial surveying—underwent a marked shrinkage after 1930 and, even with the improvement experienced in the past 2 years, such operations are far below the peak levels reached 5 years ago. The manufacture of planes and equipment also suffered a sharp curtailment subsequent to 1929, but in 1934 this industry joined the general upward movement and improvement is progressing with increasing momentum. The organized transport industry has, on the other hand, a notable record of progress which was uninterrupted even in the worst years of the depression.

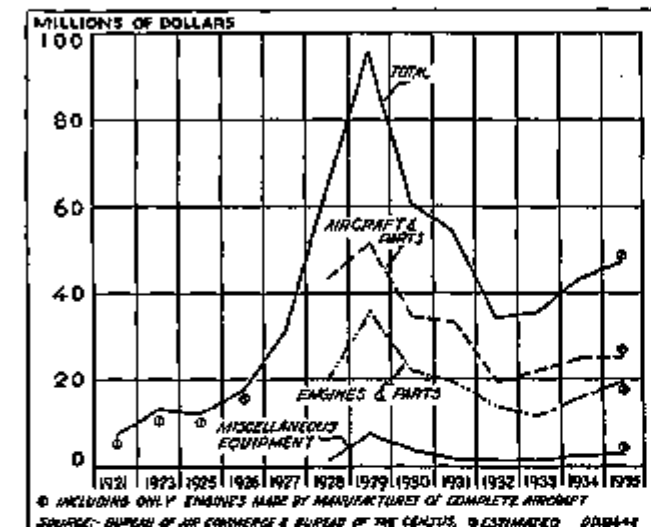


Chart 1.—Value of Production of Aircraft, Parts, and Equipment.

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The tremendous growth of the transport industry, which will be discussed in some detail later, is a development of the past decade. As late as 1926, only 5,782 passengers were carried on scheduled airlines.¹ In that year active promotional steps of the Federal Government started the transport industry on a period of rapid expansion. Widespread public acceptance of this new mode of transportation has been based on the emergence from the research laboratories of larger, safer, faster, and more comfortable planes; the development

Aircraft Manufacturing Expanded Rapidly.

While the first successful flight of a heavier-than-aircraft took place in the early years of the century, it remained for the war to give a real impetus to the development of the aircraft industry. The conflict ended with the United States Government in possession of a large surplus of planes and engines which were not used for military purposes but which were subsequently diverted to commercial use. As a result, production declined for a short period after the termination of hostilities but, as indicated on chart 1, there was a sharp upward trend in the manufacture of aircraft, engines, and parts from 1921 to 1929. In the latter year the value of production was about 10 times that of 1921, if allowance is made for the incompleteness of the data given on the chart for the earlier year. By 1932, the value of production dropped to nearly one-third of the 1929 total, and 1933 brought only a very slight change.

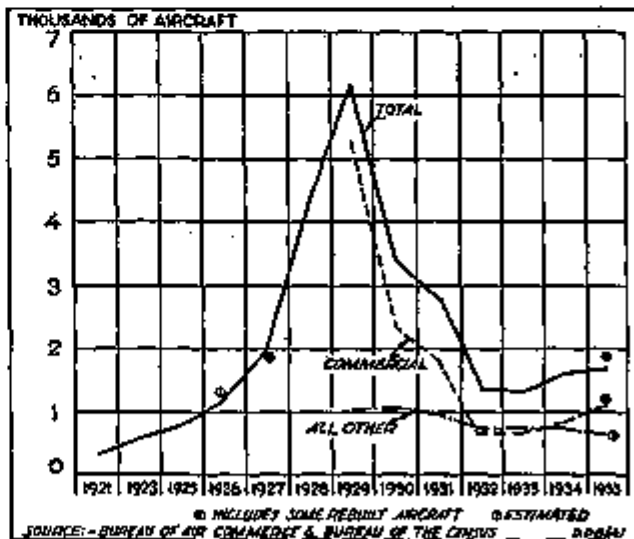


Chart 2.—Production of Aircraft.

In the past 2 years the value of aeronautical products manufactured has increased substantially.

The figures shown on chart 1 for the years subsequent to 1926 include the value of engines and parts produced by companies not classed by the Bureau of the Census in the aircraft industry. Hence, the data here given for the biennial census years are larger than the aircraft industry totals reported by the census.

¹ This figure and most others used in the article and in the charts are from the records of the Bureau of Air Commerce, U. S. Department of Commerce.

Out of the above-mentioned total value of products in 1929, \$39,400,000 (or 73 percent) was reported by the Bureau of the Census as produced by the aircraft industry.

Military Orders Main Support of Industry During Depression.

During the period of severe curtailment in manufacturing activity, military orders were the major source of support for aircraft and engine manufacturers. The problem of readjustment to a more restricted market was accentuated by the excess production of 1929, which necessitated a period of inventory liquidation. For some companies it was necessary also to curtail extensive subsidiary operations, such as flying fields and training services. These readjustments by the major companies were largely accomplished by 1932.

The industry was slow to respond to the recovery influences set in motion in 1933, since the Government economy program initiated early in that year resulted in a curtailment of the funds available for military expenditures. The influence of the economy program was also felt to some extent in 1934. However, in that year the volume of commercial business expanded considerably and for the first time since 1929 exceeded in value the military business. In 1935, an extensive program of development of the air defense forces was laid out which will mean a very substantial increase in the volume of production for military use.

Commercial planes delivered during the past 3 years have averaged much higher in price than in the period 1925 to 1932 because of the relatively large number of heavy transport planes produced in the later period. This type made up three-fourths of the nonmilitary business in 1934 and a similar high percentage in 1935. Such planes have been increasing in size and carrying capacity and have required more powerful and hence higher priced engines. The trend in the size and motive power of military planes produced has also been in the same direction.

Revival of the demand for the smaller commercial and pleasure craft will naturally tend to lower the average unit price of planes produced, notwithstanding the probable utilization of larger and more powerful ships for transport and military use.

Export Sales.

The export market has accounted for a larger proportion of the business of domestic producers of aeronautical products during the depression than in the earlier years of development. Exports of such products were relatively small until 1929, when shipments increased to \$9,126,000, a gain of 149 percent over the preceding year. In 1930 and 1931, exports dropped rapidly, but the expansion in the 3 years 1932, 1933, and 1934 carried the total to a peak of \$17,548,000 in the latter year. In 1935, the value fell to \$14,331,000, mainly by reason of the drop in exports to China,

Russia, and Germany. Shipments to these countries were unusually large in 1934.

Though aeronautical products were shipped to 73 different countries in 1935, about 60 percent of the total went to the 7 countries taking products with a value of more than half a million dollars each. These countries, in the order of size of shipments, were as follows: China, Netherlands, Russia, Japan, Brazil, Italy, and Mexico. The shipments, by countries, vary considerably from year to year. Three countries—Peru, Colombia, and Germany—each purchased more than a million dollars' worth of equipment in 1934, but in 1935 their combined purchases were valued at less than a million dollars.

Progress of the Transport Industry.

The record volume of passenger, mail, and express business in 1935 was just another milestone in the upward trend of transport activity established with the inception of the air-transport industry 10 years ago. In 1926, under the provisions of the Kelly law, the carrying of the air mail was transferred from the Post Office Department to private carriers through the awarding of mail contracts. This gave the initial impetus to the establishment and extension of private mail and passenger lines, and the carrying of mail has been the main source of revenue in every year since 1926.

In the same year that private contractors took over the carrying of the air mail, the Aeronautics Branch of the Department of Commerce (now the Bureau of Air Commerce) was created to undertake the establishment and maintenance of the airways of the Nation. Starting with a nucleus of 2,041 miles of lighted airways (that portion of the transcontinental route from New York to Salt Lake City), the Department has built up a system of lighted and radio-equipped airways approximately 22,000 miles in length.

Air-mail revenues cut since 1933.

The income from the mail business increased from \$765,549 in 1926 to \$26,884,000 in 1931. During this period the amount of mail handled rose from 377,206 to 9,643,211 pounds. In recent years the income from this source has been drastically curtailed, first, by the drop in the average volume of mail carried in the 3 years 1932, 1933, and 1934, and, second, by the change in the rate of payments by the Government under the new mail contracts awarded in 1934.

Existing domestic air-mail contracts were annulled by the Post Office Department in February 1934 and for a short time the mail was carried in Army planes. In the following May new contracts were let. For the entire year the payments for domestic mail service were cut approximately in half, from \$16,467,000 in 1933 to \$8,804,000 in 1934, the latter figure including

payments of \$2,249,000 to the War Department for mail service from February 20 to March 16, 1934. Notwithstanding these developments, the poundage of air mail in 1934 was slightly larger than in 1933. During 1935, the volume of air mail carried under the new rates nearly doubled and thus established a new record, exceeding by more than 40 percent the previous high mark set in 1931. The revenues derived from carrying mail in 1935, however, were not as large as those collected in 1931, 1932, and 1933.

Coincident with the decline in mail revenues, the receipts from passenger business gradually assumed more importance. Passenger traffic has increased in every year since 1926, although there was a drop in the number of passengers carried in one year, namely 1934, when commercial services were adversely influenced for a few months while air-mail contracts were being adjusted. Even in that year, however, the passenger-miles flown increased.

Aside from the factors of increased safety, speed, comfort, and convenience of schedules, the main impetus to travel by air has been given by the downward trend of fares. As passenger business increased, because of numbers carried and greater lengths of individual trips, the rates of fare have been reduced with a resultant improvement in the competitive status of the industry. The average fare fluctuated between 10.6 and 12 cents a mile from 1926 to 1929, but since the latter year the fare has gradually been reduced to less than 6 cents a mile. This trend has been accompanied by increased efficiency of operations on the part of the companies, particularly through the increased utilization of the available passenger space. In 1935, the percentage of all seats used on planes flying on domestic lines was 54.83 percent, compared with 51.82 percent in 1934 and 42.34 in 1932.

Notwithstanding the general acceptance by the traveling public of this newest mode of travel, the passenger traffic on the air lines is still but a small fraction of the rail traffic. In 1935, the passenger-miles flown on domestic airlines (313,905,508) was equivalent to less than 2 percent of the railroad passenger-miles, although the percentage of traffic carried between some of the principal cities is much higher than this average.

The third principal source of revenue of the air-transport companies is the express business. Receipts from this source are still considerably less than those derived from either the mail or the passenger business. The express business has developed more slowly, but during the past 5 years, as the transport planes increased in size, the volume of domestic express business increased tenfold. In 1935, the volume of express carried on domestic lines was 80 percent larger than in 1934.

While the growth of the express business may be noted from chart 3, the significance of the present volume of such traffic may perhaps be realized more readily when it is stated that in 1935 the express

poundage was 46 percent as large as the mail poundage. In 1930, the ratio of express to mail carried was about 1 to 20.

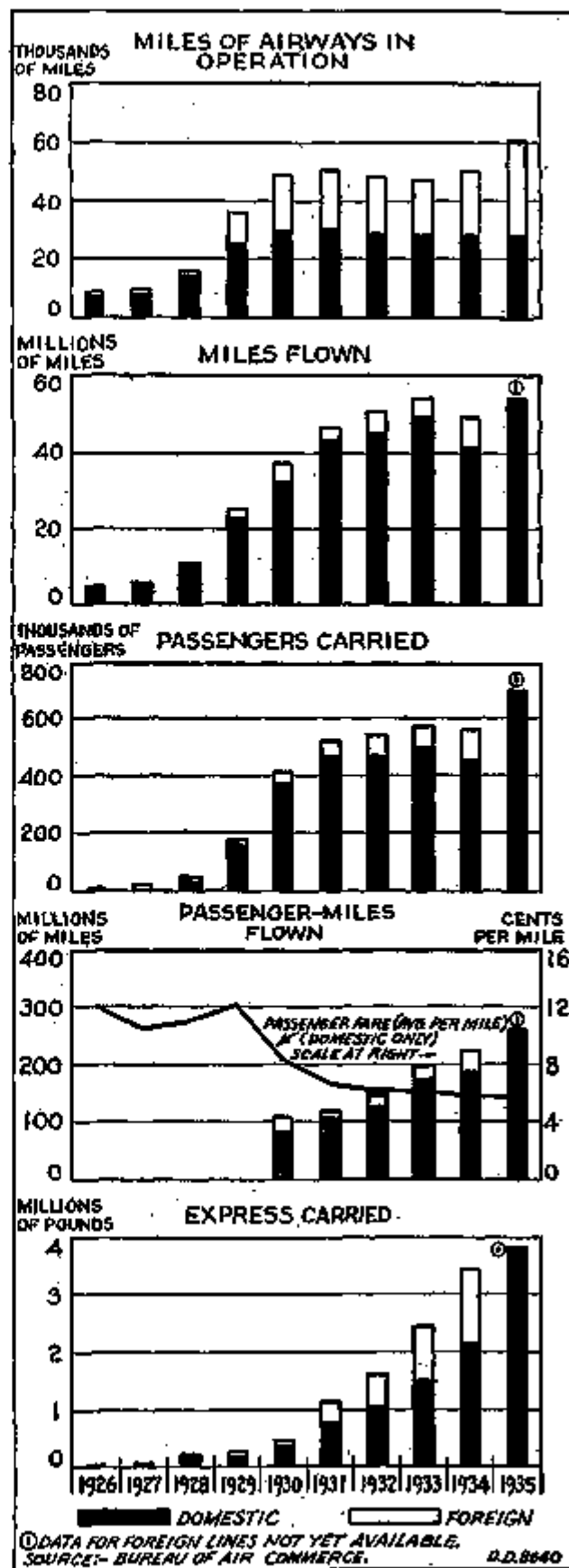


Chart 3. Growth of Scheduled Air Transport Operations, 1926-1935.